MAGNETOMETER SURVEY REPORT

on the

FETCH, HASTEN and BASIN MINERAL CLAIMS

Macmillan Pass Area

Watson Lake and Mayo Mining Districts

Yukon Territory

Longitude: 130°12'W
Latitude: 63°06'N

Map Sheet: N.T.S. 105-0-1

by

Edward J. Debicki

District Geologist, Northwestern Canada

CANADIAN NICKEL COMPANY LIMITED

May 17, 1977 - July 9, 1977
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work at the amount of $234.20.

Resident Geologist or
Resident Mining Engineer

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.

D.J. Baxter
Supervising Mining Recorder

Commissioner of Yukon Territory
TABLE OF CONTENTS

Introduction .......................................................... 1
Location and Access .................................................. 1
Topography and Climate ............................................. 2
Claims Covered .......................................................... 2
Geology ................................................................. 3
Magnetometer Survey:
(a) Survey Techniques ............................................... 4
(b) Interpretation ....................................................... 5
Recommendations ....................................................... 5

Appendices

Appendix 1 - Personnel
Appendix 2 - Certificate of Qualifications

Maps

Claim Location Map - Scale: 1 inch = 65 miles
Claim Map - Welcome North Option - South Group - Scale: 1" = 2640'
Back Pocket:
Magnetic Survey - Sheet E-7 - Scale: 1" = 200'
Magnetic Survey - Sheet F-7 - Scale: 1" = 200'
Magnetic Survey - Sheet F-8 - Scale: 1" = 200'
Magnetic Survey - Sheet G-7 - Scale: 1" = 200'
Magnetic Survey - Sheet G-8 - Scale: 1" = 200'
Magnetic Survey - Sheet H-7 - Scale: 1" = 200'
Magnetic Survey - Sheet H-8 - Scale: 1" = 200'
Magnetic Survey - Sheet J-7 - Scale: 1" = 200'
Magnetic Survey - Sheet J-8 - Scale: 1" = 200'
INTRODUCTION

The FETCH, HASTEN and BASIN claim groups were staked by Welcome North Mines Ltd. (N.P.L.) during July and August, 1976. The groups, consisting of 68 claims, are adjacent to and south of the JASON claim group held by the Ogilvie Joint Venture and where drill intersections of Pb-Zn-Ag have been reported.

The FETCH, HASTEN and BASIN claim groups were acquired under option by Canadian Nickel Company Limited during 1977. Exploration to date has consisted of a magnetometer survey and geological survey. Additional staking of FETCH 21-25 and HASTEN 25-34 was carried out during June, 1977, bringing to 83 the total number of claims.

LOCATION AND ACCESS

The FETCH and HASTEN claim groups are situated in the Mayo Mining District, Yukon Territory; the BASIN claim group is situated in the Watson Lake Mining District, Yukon Territory. The claim groups lie within N.T.S. area 105-0-1 at 130°12'W longitude and 63°06'N latitude. Ross River, Yukon Territory, is located approximately 105 air miles to the southwest of the claim groups.

Access to the claim groups is by way of the North Canol Road (summer traffic only) from Ross River, Yukon. The road transects the claim group and forms the boundary between the Watson Lake and Mayo Mining Districts. Access within the claim group is by foot or by helicopter. A base camp was situated on claim FETCH 21 (YA15167) between the South Macmillan River and the North Canol Road at Mile 268.1. An airstrip is located near Macmillan Pass, alongside the North Canol Road, approximately seven miles north of the base camp location.
SOUTHERN YUKON TERRITORY

Scale 1 inch = 65 miles

- International Boundary
- Provincial Boundary
- Highway
- Railroad
- Townsite

NORTHWEST TERRITORIES

SUBJECT PROPERTY

CLAIM LOCATION MAP
HASTEN, BASIN, and FETCH GROUPS
WATSON LAKE and MAYO MINING DISTRICTS
YUKON TERRITORY

7/77
TOPOGRAPHY AND CLIMATE

The claim groups are situated within the Hess Mountains region of the Selwyn Mountains. The elevation difference between the claim groups is approximately 1,900 feet, with the highest point approximately 5,650 feet above sea level. All areas of the claim groups are accessible by foot. Slopes range from 0° to 45°, with slopes of 25° to 35° occurring in most areas of talus and outcrop.

During the latter part of May and during June the weather was mainly cool and overcast, with frequent rain, snow and hail falls. The early part of July was characterized by cool weather, again with rain and snow falls; the latter part of July was warm and mainly sunny.

The tree line on the claim groups is approximately 4,500 feet above sea level. Below the tree line, the area is forested by fir, black spruce, willow and arctic black birch. Mosses and lichens cover much of the claim groups above the tree line.

CLAIMS COVERED

Work was carried out on all claims which were not overstaked onto previously existing claims. All work was performed by personnel of Canadian Nickel Company Limited.

<table>
<thead>
<tr>
<th>Claims</th>
<th>Record Numbers</th>
<th>Mining District</th>
</tr>
</thead>
<tbody>
<tr>
<td>FETCH 1-16</td>
<td>YA5963 - YA5978</td>
<td>Mayo</td>
</tr>
<tr>
<td>FETCH 17-20</td>
<td>YA6144 - YA6147</td>
<td>Mayo</td>
</tr>
<tr>
<td>FETCH 21-25</td>
<td>YA15167 - YA15171</td>
<td>Mayo</td>
</tr>
<tr>
<td>HASTEN 1-4</td>
<td>YA6140 - YA6143</td>
<td>Mayo</td>
</tr>
<tr>
<td>HASTEN 5-24</td>
<td>YA5943 - YA5962</td>
<td>Mayo</td>
</tr>
<tr>
<td>HASTEN 25-28F</td>
<td>YA15172 - YA15175</td>
<td>Mayo</td>
</tr>
<tr>
<td>HASTEN 29-34</td>
<td>YA15325 - YA15330</td>
<td>Mayo</td>
</tr>
<tr>
<td>BASIN 1-24</td>
<td>YA192 - YA215</td>
<td>Watson Lake</td>
</tr>
</tbody>
</table>

Total: 83 claims
All claims are held at present by Canadian Nickel Company Limited except FETCH 21-25 and HASTEN 25-28F which are in the process of being transferred to Canadian Nickel at the time of writing this report.

GEOLOGY

The stratigraphic succession in the claim groups area has been defined by Clyde Smith of Ventures West Capital, after approximately five summers' field work in the area; he considers the TOM and JASON Pb-Zn-Ag deposits to lie within a small miogeosynclinal basin about six miles by eight miles in extent on the margin of a larger geosynclinal basin. Many of the units present show strong lateral variations in facies type and in thickness. Syndepositional faulting may have been responsible for at least part of the variation observed. A generalized stratigraphic section is given below:

<table>
<thead>
<tr>
<th>CRETACEOUS</th>
<th>Unit 5</th>
<th>Hornblende-biotite granodiorite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit 4</td>
<td>Orange-to-buff weathering siltstone and fine-grained sandstone, with well-developed parallel and cross laminations and, in places, characteristics of turbidites.</td>
</tr>
<tr>
<td>DEVONIAN-MISSISSIPPIAN (Besa River Formation)</td>
<td>Unit 3</td>
<td>Silvery weathering carbonaceous-to-siliceous shale, without internal stratification except very near the base where parallel laminations are present. Up to four spotted barite horizons occur in this unit (unit hosting TOM and JASON Pb-Zn-Ag mineralization).</td>
</tr>
<tr>
<td></td>
<td>Unit 2</td>
<td>Polymictic conglomerate, with the majority of pebbles of chert. Grain size, percent of pebbles, pebble composition and unit thickness are variable. Unit 2 is approximately 500 feet thick at the TOM and JASON properties, and is absent elsewhere.</td>
</tr>
<tr>
<td></td>
<td>Unit 1</td>
<td>Siliceous-to-carbonaceous shale and silty argillite. The rock is laminated, weathers light-to-dark-grey and is brown-to-black on fresh surfaces.</td>
</tr>
<tr>
<td>ORDOVICIAN-SILURIAN (Road River Formation)</td>
<td>Black limestones, chert, and graptolitic shales.</td>
<td></td>
</tr>
</tbody>
</table>
Rocks of the Road River Formation are not exposed on the claim groups, although they are exposed immediately to the north on the JASON claim group.

Generally, the succession of Paleozoic sedimentary rocks strike northwest and dip gently away from the centre of the claim groups in an antiform. The South Macmillan River flows along the anticlinal valley developed in the area. A large pluton of Cretaceous hornblende-biotite granodiorite lies on the east boundary of the claim group.

Mineralization in the claim groups area occurs at two levels within the stratigraphic succession. The MOOSE barite deposit, which lies to the southwest of the claim groups, occurs within rocks of Unit 1. The TOM and JASON lead-zinc-silver deposits and the TEA barite deposit occur within rocks of Unit 3. No lead, zinc or silver mineralization was found on the claim group, although barite was found on the eastern portion of the claim area.

MAGNETOMETER SURVEY

(a) Survey Techniques

A grid, consisting of 18,400 feet (3.49 line miles) of base line trending 320° and 159,600 feet (30.13 line miles) of cross-lines, was established on the FETCH, HASTEN and BASIN claim groups during May and June, 1977. Cross-lines were spaced 800 feet apart, with 100-foot stations.

Magnetometer readings were taken every 100 feet on the entire grid during June and July, 1977. A Scintrex magnetometer, model MF-1 Fluxgate, was used to carry out the survey.

Base stations were established at the camp as well as at several locations along the base lines. All readings have been corrected for diurnal drift.

The results of the magnetometer survey have been plotted and contoured on the maps in the back pockets of this report.
(b) **Interpretation**

The magnetometer survey was carried out to determine whether magnetic characteristics, indicative of particular stratigraphic units or structural trends, could be used to trace stratigraphy and structure in overburden- and talus-covered areas on the claim groups.

The results of the magnetometer survey are essentially flat except for one area. In general, magnetics vary about 200 gammas above a background of around 1,000 gammas, throughout the survey area. In the southeast corner of the claim groups, magnetic differences of about 600 gammas are attributable to minor pyrrhotite in rusty weathering siliceous siltstone of Unit 4d. The pyrrhotite has formed as a result of contact metamorphism between the sediments and the Cretaceous granodiorite intrusive.

**RECOMMENDATIONS**

The magnetometer survey has not proven to be a useful exploration tool in distinguishing stratigraphic units and structural trends on the FETCH, HASTEN and BASIN claim groups. This is attributable to the lack of magnetic components associated with any of the stratigraphic units or structural elements.

Geological mapping is being carried out simultaneously with the magnetometer survey and the results of the geological survey are covered in a separate report.

Recommended further exploration will consist of a soil sampling survey in overburden-covered areas, and vertical and horizontal loop electromagnetic surveys to be completed before the conclusion of the 1977 field season.

Respectfully submitted,

CANADIAN NICKEL COMPANY LIMITED.

Edward J. Debicki,
District Geologist, NW Canada.
APPENDICES
APPENDIX 1 - PERSONNEL

Personnel employed during the course of this work:

E. J. Debicki 41 Ketza Road, Whitehorse, Yukon. Y1A 3V3

W. O. Manson Box 1135, Copper Cliff, Ontario. POM 1NO

T. Little c/o D. Blake, Penage Road, Whitefish, Ontario.

G. Eden 98 Roblin Street, Timmins, Ontario.

R. L. Debicki 41 Ketza Road, Whitehorse, Yukon. Y1A 3V3

J. P. Restoule 20 Athlone Road, Cambridge, Ontario. N1R 1H8

G. Multamaki 40 Norden Crescent, Sault Ste. Marie, Ontario. P6B 1T1

M. Festeryga 130 Pinecrest Road, Apt. 1511, Ottawa, Ontario.

F. Godfrey 189 William Street, Kingston, Ontario.

J. D. Williams 3029 Rue La Forest, Apt. 11, Ste. Foy, Quebec. G1W 1L6

K. Baldry 1121 Terra Court, Port Coquitlam, B.C. V3B 4Z9

M. Greer P.O. Box 5033, Whitehorse, Yukon.

W. Marsaw c/o Canadian Nickel Co. Ltd., Copper Cliff, Ontario. POM 1NO
APPENDIX 2 - CERTIFICATE OF QUALIFICATIONS

I, EDWARD J. DEBICKI, of the City of Whitehorse, in the Yukon Territory, HEREBY CERTIFY:

1. THAT I reside at 41 Ketza Road, Whitehorse, Yukon Territory, Y1A 3V3.

2. THAT I am a graduate of McMaster University with a degree of Bachelor of Science (1971).

3. THAT I am District Geologist, Northwestern Canada, with Canadian Nickel Company (subsidiary of Inco Metals Company) of Copper Cliff, Ontario, POM 1NO.

4. THAT I have practised my profession as a geologist for six (6) years, having worked in Ontario, Quebec, Northwest Territories and the Yukon.

5. THAT I visited the property discussed in this report and that the work described in this report was carried out under my supervision.

6. THAT I am an Associate Member of the Geological Association of Canada.

DATED at Whitehorse, Yukon, this 3rd day of October, 1977.

Edward J. Debicki
MAPS